

1 What we claim is:

2 1. A method for making an infection-resistant fabricated textile article useful for
3 biomedical applications *in-vivo*, said method comprising the steps of:

4 obtaining a fabricated textile article comprised of at least one type of fiber or fabric
5 matrices able to take up aqueous fluids;

6 preparing an aqueous antibiotic fluid of predetermined concentration comprising
7 water and at least one water-miscible antibiotic composition which has characteristic
8 antimicrobial properties, is heat stable and has a relative molecular mass in the 300-1500
9 range;

10 perfusing said prepared antibiotic fluid across said fibers or fabric matrices of said
11 fabricated textile article for a prechosen period of time such that said prepared antibiotic fluid
12 permeates at least some of said fibers or fabric matrices comprising said fabricated textile
13 article;

14 allowing said antibiotic perfused fabricated textile article to dry; and

15 heating said dried antibiotic perfused fabricated textile article to an elevated
16 temperature for a predetermined period of time sufficient to incorporate said antibiotic
17 without significant modification to said fibers of said fabricated textile article such that said
18 fiber incorporated antibiotic retains its characteristic antimicrobial activity.

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20 2. The method for making an infection-resistant fabricated textile article as recited in
21 claim 1 wherein said antibiotic is a fluoroquinolone.

- 1 3. The method for making an infection-resistant fabricated textile article as recited in
2 claim 2 wherein said fluoroquinolone antibiotic is at least one selected from the group
3 consisting of Ciprofloxacin, Ofloxacin, Norfloxacin, Sparfloxacin, Tomafloxacin,
4 Enofloxacin, Lovafoxacin, Lomefloxacin, Pefloxacin, Fleroxacin, Avefloxin, and DU6859a.
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- 6 4. The method for making an infection-resistant fabricated textile article as recited in
7 claim 1 wherein said fiber is comprised of at least one synthetic polymer material.
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- 9 5. The method for making an infection-resistant fabricated textile article as recited in
10 claim 4 wherein said fiber is comprised of a synthetic polymer material selected from the
11 group consisting of polyethylene terephthalate, nylon, polyurethane, polytetrafluoroethylene,
12 polyglycolic acid, and mixtures of these polymers.
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- 14 6. The method for making an infection-resistant fabricated textile article as recited in
15 claim 1 wherein said fiber comprises a naturally-occurring material.
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- 17 7. The method for making an infection-resistant fabricated textile article as recited in
18 claim 6 wherein said naturally-occurring fiber material is selected from the group consisting
19 of silk, cotton, linen, and wool.
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- 21 8. The method for making an infection-resistant fabricated textile article as recited in
22 claim 1 wherein said perfusing step further comprises the steps of:

1 employing a structured perfusion chamber of sufficient internal volume to contain the
2 fabricated textile article; and

3 delivering said prepared aqueous antibiotic fluid to said internal volume of said
4 structured perfusion chamber for perfusion across said fibers of said fabricated textile article.

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6 9. The method for making an infection-resistant fabricated textile article as recited in
7 claim 1 wherein said fabricated textile article is an implantable medical prosthesis.

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9 10. The method for making an infection-resistant fabricated textile article as recited in
10 claim 1 wherein said fabricated textile article is an implantable mechanical medical device.

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12 11. The method for making an infection-resistant fabricated textile article as recited in
13 claim 1 wherein said fabricated textile article is an implantable tubular conduit suitable for
14 vascular graft applications.

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16 12. The method for making an infection-resistant fabricated textile article as recited in
17 claim 1 wherein said fabricated textile article is a wound treatment dressing.

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19 13. The method for making an infection-resistant fabricated textile article as recited in
20 claim 1 wherein said heating of said dried antibiotic perfused fabricated textile article
21 further comprises exposing said perfused fabricated textile fabric to dry heat at an
22 elevated temperature ranging from about 100-300°C for a prechosen period of time.

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1 14. The method for making an infection-resistant fabricated textile article as recited in
2 claim 1 wherein said heating of said dried antibiotic perfused fabricated textile article
3 further comprises:
4 immersing said dried antibiotic perfused fabricated textile fabric in a liquid
5 dye bath of comparable antibiotic concentration; and
6 heating said liquid dye bath and said immersed perfused fabricated textile
7 fabric to an elevated temperature ranging from about 60-120°C for a prechosen period
8 of time.
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